Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at http://about.jstor.org/participate-jstor/individuals/early-journal-content.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

SOCIETY OF ARTS.

FRIDAY, OCTOBER 28th, 1853.

NOTICE TO INSTITUTIONS.

A number of copies of a work on Drawing having been placed at the disposal of the Council, as presentation copies for the Drawing Masters of the Institutions in Union, it is requested that any of the Masters who may wish to have a copy will apply to the Secretary.

STATISTICS.

The Circular and List of Queries proposed by the Society of Arts, 25th July last, with a view to obtaining correct information as to the actual condition of the Literary and Scientific Institutions and Mechanics' Institutes of the United Kingdom, have been duly responded to by about one-third of the whole number. Many of those which have been received have evidently been most carefully filled in, and considerable time must have been occupied in procuring the requisite information for the purpose. But unless a large proportion of the remaining two-thirds are returned, it will not be possible to publish a summary of the replies in that form which was at first intended, so as to show not only the actual extent and importance of these Institutions, but also their predominance in particular districts and counties, so as to enable some deductions to be drawn as to their usefulness in promoting and advancing education.

It is earnestly desired that those Institutions which have not yet made any return to the Queries in question, will do so with as little delay as possible, and not later than the 1st of November; and that the secretaries and officers of Institutions will also urge upon others in their several localities, or to whom they may happen to be known, the importance and necessity of making the returns by the time stated.

EXHIBITION OF INVENTIONS.

It may be said that to attempt to find a new form of words annually by which to set before the members of the Society of Arts the importance and utility of holding Exhibitions, is a useless expenditure of time, especially at a period when Exhibitions themselves have become, as familar as "household words," and their utility as a means of education almost universally admitted. The truth of such a statement, in reference to manufactured articles and the fine arts, cannot be denied; but, notwithstanding the efforts which have been made, from time to time, to prove to inventors that their interests would be materially advanced, and their claims upon the public for special support greatly increased, by the annual exhibition of the results of their individual labours—and the arguments so continually urged against the propriety of the Government granting monopolies for the sole manufacture of articles resulting from their ingenuity, would be much weakened—still it is with great difficulty, and at considerable cost, that collections of patented articles, even on a limited scale, can be brought together; and, consequently, an object so much to be desired is rendered difficult of accomplishment.

The annual exhibition of a complete series of models, and drawings of patented articles, would doubtless do much to show in what direction the public require the greatest amount of ingenuity to be exercised at a given time, and the various means by which such requirements are endeavoured to be met. So strongly has the necessity for the existence of such a collection been urged by some, that when discussing the Patent Laws, and modes of amending them, previous to the present laws being framed, it was considered that a clause should be introduced into the Act by which it should be rendered imperative upon every inventor, and one of the conditions upon which the patent was granted, that he should deposit with the Government a model of the improved machine, or specimen of the manufacture, for which he claimed a right of special protection. The value of such a collection of the efforts of inventive minds would form in a few years one of the most valuable historical records which a nation could possess. It would afford a ready means of ascertaining what had previously been done in any given direction, and prevent much of the expenditure of capital by men of humble circumstances, as well as a loss of time, so detrimental to the best interests of their families.

It may be urged that the force of such argument is now greatly diminished, seeing that the law renders it imperative that a complete specification and series of drawings shall be deposited at the Patent-office, which series and specification the Government itself undertakes to publish at length. Such, we are glad to know, is the case; but what efforts, we would ask, will be made to circulate, through the length and breadth of the land, the invention of the time, and by what proportion of the public will a drawing and specification be read, examined, and understood?

Until provision is made for the spread of such general knowledge, the Council of the Society of Arts cannot but feel that they are endeavouring to supply a great public want, by collecting annually, for exhibition, a series of models illustrative of the inventions of the times; and desire strongly to urge upon members and patentees the importance of a cordial co-operation in so important a work. They propose to open the Fifth Annual Exhibition of Patented Inventions early in November, in accordance with the notice given in the last number of the Journal, and have extended the time for receiving models and specimens to the 31st instant.

LONG-HAIRED ANGORA GOAT.

The Council has for some time past had under consideration a communication from the Swellendam Agricultural Society, relative to the introduction of the long-haired Angora goat into the colony of the Cape of Good Hope, with the view to the export of its wool to Europe; which was transmitted, through the Colonial Office, to

His Royal Highness Prince Albert, K. G., the President, by whom the Council has been requested to obtain the information desired.

It would appear from the statements of Messrs. H. Vos and W. M. Hipley, sen., that, in the year 1838, Colonel Henderson (with whom Mr. Hipley, sen., formed a partnership) imported a small flock of long-haired Angora goats into the colony. This flock consisted of forty originally; of which only *one* she-goat (which never bred) and twelve rams arrived at the Cape; and of these only *one* he-goat (born on the road) was fit for propagation, the rest having been purposely emasculated in some way or other. They were sent overland from Angora to Smyrna, thence to Constantinople, Alexandria, Suez, Arabia, Persia, Bombay, and the Cape. These goats are said, on their arrival, to have stood the enterprising importer in an exorbitant sum. The reason for obtaining them by this circuitous route, as well as the enormous cost, have not been ascertained. From this goat, and its progeny, half-breeds and crosses of various descriptions have been propagated, and the health and weight of carcass of the cross breed has made them to be universally sought after by proprietors of goat flocks; but owing to the want of a sufficient number of thorough-bred goats, the cross-breed is fast disappearing. The improvement not having been carried to a sufficient extent, the value of the fleece, whether it be called mohair, tiftik, or goat's-hair, has never been ascertained. The information required by the Swellendam Agricultural Society is, whether a breed of goats exists in Angora, bearing only one description of hairy covering of a silken fineness, which can be annually clipped?—whether such fleece is purchased in Europe, as it comes from the goat's back, and without requiring the expensive picking process which Cashmere or Thibet, or other shawl wool containing an under down, must undergo?—also, what the value of such fleeces would be per pound?—and whether any large quantity of it would be required by the European manufacturers?—and whether this description of goat could be obtained *viâ* Constantinople, and sent to the Cape, at a reasonable expense?

Members of the Society and others are requested to aid the Council in procuring the desired information. And if satisfactory answers can be given to the above queries, there is little doubt but that efforts will be made by which, in a few years, a large quantity of goats' wool would be added to the exports of that colony, as there are in that district many proprietors possessing from one to two thousand goats, which are bred merely for the sake of the skin and flesh.

The subject of the white-haired Angora goat was brought under the notice of the Royal Asiatic Society, in January, 1840, when a paper was read by Lieut. Arthur Conolly, of the Bengal Cavalry, "On the White-haired Angora Goat, and on another Species of Goat, found in the same Province, resembling the Thibet Shawl Goat."* In this paper it is stated that

> "A goat resembling the shawl goat of Thibet exists throughout the country, to which the long famed, beautiful, silvery white hair goat of Angora is peculiar." . . . "The goat of the latter race is peculiar to the province of Angora, and certain adjoining districts, is invariably white, and its coat is of one sort, namely, a silky hair, which hangs in long curly locks." . . . "The country within which it is found was thus described to us: 'Take Angora as a centre, then the Kizzil Ermak (or Haly's) Changere, and from eight to ten hours' march (say thirty miles) beyond; Beybazar and the same distance beyond, to near Nalahan; Sevree, Hissar, Yoorrook, Tosiah, Costambool, Geredeh, and Cherkesh, from the whole of which tract the common bristly goat is excluded." . . . . "The fleece of the white Angora goat is called *tiftik*, the Turkish for goat's hair, in distinction to *yun*, or *yapak*, sheep's wool. After the goats have completed their first year, they are clipped annually, in April or May, and yield progressively, until they attain full growth, from 150 drachms to 1½ oke of tiftik (from 1 lb. to 4 lbs. English.)" . . . "An oke of good common *tiftik*, of this year's shearing, is now selling in the Angora Bazaar for nine piastres, or about 1*s.* 8½*d.*; and the finest picked wool of the same growth is fetching fourteen piastres per oke." . . . . . "The hair of the tiftik goat is exported from its native districts raw, in yarn, and in the delicate stuffs for which Angora has long been famous. The last are now chiefly consumed in Turkey; a little yarn and a large quantity of the raw material goes to Europe." . . . The weaver (at Angora) "contracts to work a piece of thirty *piks*, or rather more than twenty-one yards, for a sum which varies, according to the texture required, from 15 up to 100 piastres; and by working steadily, he may finish a piece of this regular measure in six days." . . . "According to the information that was kindly procured for me by an English merchant at Constantinople, when some bales of white Angora goats' hair were shipped thence to England, in 1820, the article was so little appreciated, that it brought only 10*d.* per pound. Since that period, the English demand for the raw hair has been annually increasing, and the ordinary price for many years has been 18*d.* per pound, though, from unusual causes, it has fluctuated from 27*d.* to 14*d.*" . . . "The following list of exports from Constantinople, for the last three years, will show how one article has superseded the other, and what is the present state of the trade:

		Mohair Yarn.	Tiftik.
1836 . . .	bales . . .	538 . . .	3841
1837 . . .	ditto . . .	8 . . .	2261
1838 . . .	ditto . . .	21 . . .	5528

Lieut. Conolly then speaks of another species of goat, which, however, is *not* the one that the Swellendam Agricultural Society recommends to be introduced. He says:

> "I will now speak of the second race. This goat has an unchanging outer covering of long bristle, between the roots of which comes in winter an under coat of downy wool, that is naturally thrown off in spring. A remarkably fine breed of this species exists throughout the area to which the Angora white-hair goat is limited; but similar breeds prevail all over the highlands of Turkish and Persian Armenia, and Kurdistan, in the neighbourhood of Kerman, and probably in other elevated parts of Persia." And again:—"Goats of this breed in Angora are occasionally mixed with the white-hair goat first described, either by the shepherds' inattention, or when a remarkable flock-leader is desired."

---

* Vide "Journal of the Royal Asiatic Society of Great Britain and Ireland," Vol. VI. (for 1841), pp. 159, *et seq.*

Mr. Thomas Southey, in his work on Colonial Sheep and Wools, &c. &c. (London, 1852), says:

"Within the last two or three years, a new texture, made of goat's wool, has, however, been introduced, both into France and this country, which calls for particular attention. This texture consists of stripes and checks expressly manufactured for ladies' dresses, and having a soft feel and silky appearance. The wool of which this article is made is chiefly that of the Angora goat, the properties and peculiarities of which were so faithfully delineated in the paper written by Captain Conolly." . . . "The wool of the Angora goat (*Capra Angorensis*) reaches us through the Mediterranean, and is chiefly shipped at Smyrna and Constantinople. In colour it is the whitest known in trade, and now more generally used in the manufacture of fine goods than any other. There are, however, other parts of Asiatic Turkey from which limited supplies are received, but in quality not so good as that produced in Angora." . . . "After the manufacture of shawls with goat's wool declined in France, this raw material remained neglected for a long while. About two or three years ago, however, the French made another attempt, and brought out a texture for ladies' dresses in stripes and checks, which they call '*poil de chevre.*' The warp is a fine spun silk, coloured, and the weft Angora, or Syrian white goat's wool, which was thus thrown on the surface. This article has a soft feel, and looks pretty, but in wearing is apt to cut. The price of a dress of French manufacture has been from £3 to £2 10*s.*; but by adopting a cotton warp, the same article is now made in England, and sold at 15*s.*; and it is found that the cotton warp, as a mixture, suits the goat's wool best. The principal manufactures of 'Poil de Chevre' in France are at Paris, Cronyen, Thelle (Oise), Ecrus (Oise), Montataire (Oise), and Ledan. In England the wool is chiefly spun at Bradford, and partly manufactured there, at Norwich, and also in Scotland; part of the yarn is exported, principally to France. The French are now attempting some plain goods, all goats' wool, dyed lavender, violet, &c., but it is not thought that they will answer."

In a work published by the same author, in 1851, we are told that "in 1848 the quantity of mohair, or goat's wool imported into the United Kingdom was 896,865 lbs.; in 1849 the quantity imported rose to 2,536,039 lbs. To show the gradual rise in our importations of this article, the following comparative returns are annexed:

	1846.	1847.	1848.	1849.	1850.
Goats' wool—bales .	5,231	7,023	5,468	13,254	12,884

"Angora goat's wool, for several years past, has been used by our manufacturers for plush, as well as for coach and other decorative laces; and also extensively for buttons, button-holes, and braidings of gentlemen's coats. It is equally made up into a light and fashionable cloth, suited for paletots and over-coats, having besides the advantage of repelling wet. In France this article is now applied to the manufacture of a new kind of lace, which in a great measure supersedes the costly fabrics of Valenciennes and Chantilly. The Angora goat's wool lace is more brilliant than that made from silk, and costing only half the price, it has come into very general wear among the middle classes. The same material is also manufactured into shawls, which sell from 4*l.* to 16*l.* each. When Angora goat's wool was first introduced, it realized only 1*s.* 3*d.* or 1*s.* 4*d.* per lb.; but recently, on arrival, it has been sold for 1*s.* 9*d.* or 1*s.* 10*d.*"

In a work by M. Polonceau, published in 1824,[*] it is stated that, "It was not long before I was convinced that among the different varieties of the goat known to me, that of Angora was the only one which could fulfil my intentions, that of crossing with the Cashmere, for the purpose of increasing the quantity and value of the down (duvet); because the goats of this (the Angora) breed, are the only kind of which the fine and silky fleece (toison) partakes, of many of the qualities of the down (duvet) of the Cashmere; although it does not possess equal fineness or softness, at the same time surpassing it in length and elasticity." Speaking of the Cashmere goat, M. Polonceau says, "They bear a coarse hair (poil), called Bal in Cashmere, which covers the *tiftik*, or woolly down (duvet laineux), employed in the fabrication of shawls."

NEW GAS REGULATOR.

An American invention has recently been patented in England, and introduced into Manchester, which is calculated to accomplish this object to such an extent as must ensure for it general attention. Many experiments have been made in order to determine what is the best burning pressure, and it is found to be not more than what is equal to four-tenths of an inch of a column of water. Now if this be the *best* pressure, then any degree above or below it must be inconsistent with true economy. It happens that the pressure of gas coming through the pipes in the streets is very considerably above four-tenths of an inch; perhaps never less than twice, and often more than four times in excess of it. The reason why the pressure at the gas-works cannot be made to coincide with that of the best burning pressure, is because a certain force must be exerted upon the gas, in order to propel it through the pipes to the various parts of the city and the surrounding townships. A great waste of gas is therefore constantly taking place, in consequence of the street pressure having to be received as the burning pressure. The invention we refer to is intended to remedy this evil, and having given the instrument a fair trial in our printing-office, we are in a position to speak definitely as to its efficiency. The patent regulator has been tried for a regular number of consecutive hours, and the measurement by the meter noted. It has then been disused for an equal number of hours, when the same number of lights were burning, and the result recorded. To prevent error, this has been repeated several times, since the 22nd of August to the present date. The result is as follows: when the street pressure was lower (as it was when the regulator was first attached, less gas being then burned in the town, owing to the days being longer) the saving effected by the regulator was 20 per cent.; with the present street pressure, the saving is 25 per cent., and we have no doubt but this will be the average saving the year round. The diminished cost in gas, however, is not the only advantage obtained. Every person will have noticed that in a gas-light, a large portion of the flame, immediately above the burner, is of a blue colour. This results mainly from over-pressure, and is so much diminished by the intervention of the regulator, that the light becomes much whiter, and more nearly resembling daylight. Another valuable property, one of a sanitary description, also results from the use of this contrivance. Under the street pressure, a portion of the gas escapes unconsumed, which causes an unpleasant smell, and vitiates the air. The regulated pressure admits of complete combustion, and thus the contamination is avoided. The instrument itself is of small dimensions. The upper portion of it consists of a hollow circular cup, about five inches diameter; the concave side is downward, and is immersed in quicksilver. The gas enters this concavity from beneath, after passing through the meter at the street pressure; it then takes whatever reduced pressure the consumer prefers, the whole being adjusted by simply placing the required weight at the top of the instrument. This done, no further attention seems to be required, for the simplicity of its arrangement, and the medium (mercury) in which it operates, renders derangement next to impossible; and no amount of fluctuation in the gas mains, or increased or suddenly-diminished number of lights, produces any effect upon it. The invention appears to have come into extensive use in America, and is highly spoken of by several of the newspapers, in whose offices it has been fitted up. The *New York Daily Times* says: "From several trials we have made with Dr. Kidder's regulator, we are convinced that it saves fully 25 per cent. of the gas consumed, and it gives also a better, softer, and more equable light." Speaking, however, solely from our own trial of its merits, we can have no hesitation in recommending its general adoption.—*Manchester Examiner and Times.*

---

[*] Vide "Notice sur les Chevres Asiatiques à duvet de Cachemire, et sur un essai tenté pour augmenter leur duvet et lui donner des qualités nouvelles," par M. Polonceau. 1824.

CULTIVATION OF TEA IN THE PUNJAB.

An article, "On the Physical Aspect of the Punjab, its Agriculture and Botany," by Dr. Jameson, Superintendent of the Botanic Garden, Saharunpore, appears in the current number of the *Journal of the Horticultural Society of London*, having been communicated to that body by the Honourable Court of Directors of the East India Company. In this article Dr. Jameson makes the following remarks on Tea Plantations and the Cultivation of Tea:

"The town of Kangra, situated in the middle and southern side of the valley, is elevated about 3000 feet, on the same altitude as Nugrotah, where the tea nursery is formed; Bobarnah is 4000. Here the tea plant is thriving equally luxuriantly as at the former-mentioned place. Holta, which we have selected as a site for a tea plantation, is a fine open and gently inclined (with a southern exposure) waste plain, of about four to five miles in length; and in altitude from 4000 to 5000 feet, and commanded by the Cura and the Nigul, two considerable-sized rivers. The soil consists of a thin stratum of black mould, with a subsoil of a stiff but friable reddish clay, resting on boulders. Throughout this fine valley there are many tracts of waste land at altitudes varying from 3000 to 5000 feet, equally well adapted for tea cultivation. In the adjoining province of Kooloo, a rugged and bold mountainous country, there are also many places well fitted for the tea plant. But the Kangra valley, from the facilities of exportation, and the advantages of water communication to Bombay, is second to no place, the road to the plains being adapted for camels and bullocks, most of the grain there grown being thus exported. It has been asserted that tea could not be cultivated on a sufficiently extensive scale in the north-western provinces and the Kohistan of the Punjab to supply the home market, owing to the want of land. But this is a great mistake. Land there is in abundance in the British hill provinces, and much of it lying waste, and possibly the time is not far distant when this cultivation may be carried into the valley of Cashmeer and the lower valleys of Hazara, which will be found well adapted for the purpose. In Kumaon and Gurwahl vast quantities of waste land, admirably adapted to tea cultivation, exist, and all that is wanted is capital to clear the jungles. Major Madden has stated, in his account of Kumaon, that the Zemindars give up their lands for the culture of tea with difficulty, and that but little waste land exists. The latter assertion is erroneous, but the former, regarding the people of Bheemtal, is true. Not so with others in Gurwahl, and this I give not only on my own authority, but on that of a person[*] high in rank, who, on a late tour through Kumaon and Gurwahl, found the Zemindars most anxious and willing to undertake the cultivation of the tea plant, and land to any amount available, provided that the officers in charge of the districts "went the proper way about it." Mr. G. Barnes, the talented deputy-commissioner of the Kohistan, states that 25 per cent. of his districts might most advantageously be cultivated with tea. The commissioner of Kumaon, too, Mr. Balten, states that land for tea cultivation is abundant. Thus regarding the district of Katere, he says, "Biejnath, situated on the frontier of Kumaon with Gurwahl, and in the neighbourhood of Budbak Fort, was often, in all probability, the scene of border conflicts and military exactions; and the desertion of villages once having commenced, and no means of restoring the population being at hand, the deterioration of climate originating in the spread of rank vegetation and the neglect of drainage, &c., may be supposed to have gone on from worse to worse, till finally the heat and moisture were left to perform all their natural ill offices, unchecked by the industry and efforts of man." Viewing, however, the present slight improvement in a hopeful light, *and remembering the less favourable situations in which tea nurseries are thriving*, I am of opinion that the district of Kuttoor (Biegnath) would be found the one most deserving of selection for the future spread of Kumaon tea cultivation. Irrigable unoccupied lands, at between 3000 and 5000 feet above the level of the sea, abound on the lower slopes of the hills, while much of the good land in actual possession is occupied by migratory tenants at will, unattached to the soil, in whose place the Pudhans of villages could have no reasonable objection to see profit paying wealthy planting gardeners. The very fact that at the present settlement (which took place before any discussion arose concerning the extension of the tea experiment) seventeen pottahs of villages were, in Kuttoor, obliged to be made over to non-proprietary moostagirs, or farmers, the richer or less desponding neighbours of the resigning pudhans, shows that available ground was at our disposal. But there, and in Pergunnahs, Gungolie, Sher, and Seera, the sole expense of securing the land would have been (and even now in many places would still be) the wiping off the Jumna from the revenue books, probably some paltry sum of less than twenty rupees per annum. Again, at p. 342 of his excellent Settlement-report of Gurwahl, he states, "Those who look to the spread of the cultivated tea-plant over these mountains as likely to change their financial position to the state altogether, and convert them into treasuries of surplus revenue, may not be far wrong. If this extension of the China herb be at first carried on (in the way I have pointed out in the preceding report) without disturbing present possessions, and thus exciting more than the ordinary and normal native disgust at the novelty, the present generation may yet behold the now jealous occupants of rice and wheat-fields, humble applicants for tea-seeds." Such, too, is the opinion of the District-officer, Captain Ramsay. This season Mr. Batten informs me that in several districts, though the crops have been immense, yet the Zemindars find difficulty in paying their revenue, as the market is so glutted with the grain it will not pay the carriage. If proofs were wanting, in order to show the advantages of tea cultivation throughout the Kohistan and British hill provinces, stronger could not be brought forward than the facts here stated.

---

[*] Mr. Robinson, of the Revenue Board, N.W. Provinces.

"Here we have the agricultural population with grain lying on their hands as a perfect drug, and not worth carriage to the available markets, and at the same time complaining that owing to the abundant harvest prevailing throughout the country they cannot pay the revenue. Were the system prevailing in China (according to the statements of Mr. Fortune) introduced into the British Himalayas, viz., a certain quantity of tea cultivation in each village community, we could no longer hear the above complaints, as for tea-leaves there could always be a ready and remunerative market; moreover, the high rate at which they could be purchased at the manufactories, viz., eight rupees per maund, could admit of their transport by the Zemindars from a great distance, even sixty or seventy miles, with profit. But one of the greatest obstacles to the cultivation of the tea-plant by Zemindars is the dread that land so occupied will be charged at a higher rate than other produce, or resumed by government. To remove these prejudices steps are now being taken by the commissioner. Let these once be removed, and the agricultural population* convinced of the utility of tea cultivation, and we shall no longer hear that there are no available lands."

BERDAN'S GOLD MACHINE.

On Thursday week several of the proprietors of the Cwmheisian Mines, in Merionethshire, North Wales, made some experiments at the Windsor Iron-works, in the City-road, where one of these machines with two basins has been erected, for the purpose of testing its merits upon ores from those mines. The Cwmheisian Mines have been long known to possess gold ore, in addition to lead and other minerals, for which they have been ostensibly worked. A large fortune was, it is said, spent by the late proprietor, in endeavouring to obtain the riches which existed, but the great cost of extracting them by the machinery hitherto available, rendered the attempt unsuccessful. The result of the experiment was stated to be as follows: that 362 lbs. of ore taken from various parts of the East Mine, yielded by amalgamation 154 grains of pure gold, or after the rate of 2 ozs. 12 grains to the ton of ore; that 98 lbs. of the ore from the West Mine, yielded, by amalgamation, 66 grains of fine gold, or after the rate of 3 ozs. 16 dwts. to the ton of ore; that the gold, on assay, was found perfectly pure; and that the residuum, or "tailings," on careful assay, contained no trace of gold.

On Wednesday last a number of scientific gentlemen attended at the same place to witness similar experiments. In one of the basins was placed 444 lbs. of Poltimore ore, and in the other 320 lbs. of ore from mines in Merionethshire. From the Poltimore ore 5 dwts. 11 grains of pure gold, was stated to have been produced, and from the Welsh ore, 5¾ dwts.

The machine itself seems capable of some improvements in the details, and it is not difficult to imagine that the present method of giving motion to the basins by means of cog-gearing will soon be superseded. One material point has been omitted in the statements which have been made as to the results obtained by the machine, and that is, the probable expense of working—for even gold, like other things, may be made unprofitable, if the cost of obtaining it is greater than its value in the market.

PUBLIC HEALTH.

LEAD, COPPER, OR ZINC PIPES.

The Minister of Commerce, Agriculture, and Public Works in France, has just issued a circular to all Préfects, calling upon them to put a stop to the use of lead, copper, or zinc pipes in breweries. The Minister in his circular states that "Experience proves that beer, by simple contact with lead, takes up an appreciable quantity of the metal, and thus acquires poisonous properties. Leaden pipes are not only used in breweries; but a custom has arisen in taverns, and in houses where wine is sold, of using a small pump, which communicates with the barrels in the cellar by means of a leaden pipe. The use of the pipe in this instance is peculiarly objectionable, inasmuch as the action of the pump is at intervals only. A whole family was poisoned by using for some time a pump of this kind for drawing up their ordinary consumption of wine. The Préfect of the North, who had already taken the initiative in adopting measures necessary for putting a stop to the methods used in his department for the refining of beer, has, following the advice of the Council of Public Health, just proscribed the use of lead, copper, or zinc pipes, for the drawing or transmission of this liquid.

COLONIAL CORRESPONDENCE.

GARANCINE AND JUICE OF THE MUDDAR.

The Society has received a communication from the Secretary to the Agricultural and Horticultural Society of India, enclosing extracts of letters from Mr. T. T. Henley, and Capt. G. E. Hollings (Deputy Commissioner in the Punjâb), relative to "Garancine," manufactured from the "munjeet," or Indian madder (*Rubia Munjista*, Roxb.), and to the juice of the "ak," or "muddar" plant (*Calotropis Hamiltonii*), samples of both of which (a "muster" of each) have been forwarded to the Society.

In regard to the first of these products, Mr. Henley says, that he has found the "munjeet," or Indian madder, to yield, when submitted to similar processes, all the different products obtainable from the madder of Europe; such as, for instance, the substance "garancine," or the colouring-matter of the plant simply combined with carbonized vegetable matter, and obtained by mixing gradually an equal weight of concentrated sulphuric acid on powdered "munjeet," or madder; and then by washing out the acid thoroughly with cold water. The process requires considerable care and management to prevent too great heating of the materials; and in Mr. Henley's experiments the vessels were kept plunged in cold water during the operation. It would appear that all the colouring matter of four tons of munjeet, as at present packed, might be packed in the space of one ton; although in point of actual weight, it may be estimated that three tons of munjeet produce one ton of garancine. At present, from the bulky nature of munjeet, the charge for freight is so great as to render its export almost null. The advantages, therefore, which would result from this change of condition are very obvious. By the manufacturer, madder in the form of garancine, is preferred for several reasons; and the greater portion of French madders are now converted into garancine for the purposes of the dyer. It is desirable that the fullest practical information should be obtained on the subject of the garancine manufacture as now practised in France, commencing with the best processes for grinding the root to powder; with observations as to such modifications as might be necessary for rendering similar machinery available for grinding Indian munjeet; and members of the Society are solicited to aid in obtaining this information. Mr. Henley found that the reduction of such a tough and fibrous matter as munjeet, even to a coarse powder, was a matter of great difficulty. The method of employing the acid on a large scale, so as to obviate destructive heating,—the recovery of the acid,—processes of drying, powdering, &c., are all points which require attention. It is considered that such a manufacture, if once successfully introduced, is peculiarly well suited to India. The munjeet climber is found there in the wild and cultivated state, and covers an immense extent of country. The cheapness at which it can be produced, and the valuable colouring matter which it contains (perhaps the most valuable dye in existence, the madder red), prove the importance of the subject.

---

* This season many Zemindars have applied for plants and seeds. For extension there will be upwards of three tons of seeds available.

The letter from Captain Hollings, relative to the second product mentioned above, has reference to a premium offered by the Society of Arts, last year, "for the importation of any new substance which can be successfully used as a substitute for caoutchouc." It would seem that the acrid juice of the "ak," or "akundo," has been employed for ages by the natives of India for various medicinal purposes; and the plant itself, and its preparations, to cure all kinds of nervous disorders. It has also been subjected by European practitioners to a regular set of experiments, and is stated to be efficacious for various complaints; but the proposed employment of the milky juice as a substitute for gutta percha has been but lately brought under the notice of the public.* Capt. Hollings is anxious to know what price this article will fetch in the English market. The above mentioned plant also yields a fibre, a specimen of which, in a bleached state, along with some thread, twine, cord, and rope made therefrom, have been likewise sent to the Society. Thus it will be seen that the "muddar," "ak," or "akundo," possesses several valuable properties; and it may be added, that it abounds more or less in most parts of India; and is so exceedingly hardy, that it thrives in soils where scarcely any other plant will grow. The downy filament contained in the follicle, or seed pod, forms a good stuffing for pillows, and for certain garments commonly worn by the natives.

HOME CORRESPONDENCE.

IMPROVEMENTS IN NAVIGATION AND METEOROLOGICAL OBSERVATIONS.

White Barns, Buntingford, Oct. 26th, 1853.

SIR,—I have to request you will submit to the consideration of the Council of the Society the accompanying specification † of my Patent for the Improvement of Navigation and Meteorological Observation.

The American Government are fully aware of the importance of continuous observation; and my prepared charts furnish the basis upon which these may be faithfully recorded. The apparatus may be easily attached to all steam-vessels, and particularly to those which are fitted with the screw propellers.

His Royal Highness Prince Albert, our respected President, as Master of the Trinity House, might order the Trinity Yacht to be fitted with a Channel-chart; and that establishment would have the credit of being the first to introduce an improvement which, in its consequences, may tend to increased confidence and security in all our maritime operations.

The Council must be aware of the difficulties which necessarily attend all new propositions. My object is to keep pace with the scientific exertions of other nations; and by a friendly combination of the efforts which are now making, and concentrating the information obtained in different parts of the world, a series of deductions might be established which would be invaluable in every point of view—not only as conducive to the advancement of science, but also to the safety of the mariner, whose existence depends upon a correct knowledge of the force and set of the currents of the ocean.

With the view of carrying out these objects, I should suggest the adaptation of an office, with an appropriate staff, for arranging the different communications and instructing young persons, so as ultimately to form a class, to be hereafter denominated Hydrographers. They would be thoroughly instructed in the use of the prepared charts; and as they advance in intelligence as observers, would be found of great importance, both for the public and commercial services. "No fact," therefore, "gathered in such a field as this, can come irrelevant to those who tread the walks of inductive philosophy; for in the hand-book of Nature, every such fact is a syllable: and it is by patiently collecting fact after fact, and by joining together syllable after syllable, that we may finally seek to read aright from the great volume which the mariner at sea and the philosopher on the mountain see spread before them."

The charts will be prepared upon the most approved plan for every particular occasion, and their development will be commensurate with the speed of the vessel, giving a faithful delineation of the path pursued, accompanied by a detailed account of such observations as it may be found necessary to make in the course of the voyage.

I shall have much pleasure in attending at the Society of Arts, with my models, if the Council think the subject of sufficient importance to interest the Members.

Your obedient Servant,
THOMAS HOBLYN.

The following are extracts from the specifications referred to by Mr. Hoblyn:

"This patent is directed to the accomplishment of two objects perfectly new in the art of navigation—first, by a self-acting mechanism, to trace out upon prepared charts the direction of a ship's motion, and the distance sailed; and, secondly, to adapt to an ordinary time-piece a chart, having the outline of any given line of coast inscribed upon it, and caused to revolve by clock-work in proportion to the ascertained mean speed of the vessel, so as to give by inspection an approximate knowledge of the part of the coast a vessel may be near at any particular time by the clock to which the chart is attached.

"A modification of the above arrangement for indicating the ship's course is described in the patent. Instead of passing a paper or chart over a drum, and causing the lines to be drawn by means of a pencil, the patentee uses a portion or segment of the surface of a sphere, on which is drawn the outline of the voyage. This segment

---

* *Vide* JOURNAL OF THE SOCIETY OF ARTS, No. 40, p. 485.

† Vide *Mechanics' Magazine* for Jan. 8th, 1853.

is mounted upon a spindle or shaft centred by a pivot, and a counterpoise attached to the lower end of the shaft for the purpose of always keeping the segment in equilibrium. An electro-magnet is attached to the counterpoise, by means of which the segment is retained in its position, north and south, independently of the line of the ship's course; so that when the vessel is tacking, or under the influence of head winds, or other contingencies, the line upon the surface of the segment shall indicate the ship's course.

"A wheel or marker, having a number of fine points upon its circumference, is caused to revolve by means of an endless screw, actuated by the rotation of a vane, similar to the one represented. This marker, or indent, upon the surface of the segment, is a line which will be as near as possible a representation of the course in which the vessel is proceeding.

"The second portion of the invention consists of a circular chart, which is attached to the striking portion of a time-piece, but in such a manner that the chart shall revolve upon its centre at certain regular intervals of time, and also at a fixed rate of speed. The speed with which the circular chart revolves must be as near as possible in true accordance with the ascertained speed of the vessel. An index points out on the chart the particular portion of the whole coast the vessel may be passing. The circular charts are capable of being removed, so that any other chart constructed upon the same principle, and representing any other portion of coast the vessel may be despatched to, may be placed upon the spindle of the time-piece. It may also be applied, by the intervention of a drum and strap, to the moving power of the paddle-wheels or screw-propeller with equally good effect."

FLAX, AND ITS PRODUCTS, IN IRELAND.

Contributed by William Charley, Seymour-hill, Belfast.

LETTER II.

The board of trustees of the "Linen and Hempen Manufactures," so far as I can ascertain, was always composed of the leading men in this country. I have all their Reports before me from the year 1815 to 1828, and during this period I find the very highest of the nobility and gentry acting as trustees. This is very satisfactory, and shows the interest taken in the welfare of the nation by the lords of the soil.

The trustees met in Dublin at their house, near the Linen-hall, every Tuesday to transact business. Consirable drawbacks were allowed on the export of linens; and the English Parliament granted a yearly sum of 20,000*l.* for this purpose, and also for regulating and empowering the manufacture. Intelligent inspectors were appointed in the country districts; and without doubt, the following extract shows that some guardian power was required to watch its interests, and that some rather dishonourable exceptions existed among the generally well-intended landed gentry:

Report for 1815, *page* 53.

"A letter from the inspector for the province of Munster, respecting the levying of tolls upon linens in the town of Tralee, in the county of Kerry, was presented and read, and is as follows:

"Great Charles-street, 27th February, 1815.

"My Lords and Gentlemen,

"I have received information from Mr. Trant, the inspector for Kerry, that Sir Edward Denny, and his Agent, support the tax-gatherer in the town of Tralee, in persisting to exact a toll of 5 per cent. on all linens sold in that town, although he, the inspector, has frequently remonstrated against it. May it therefore please your honours to order such steps to be taken as to your wisdom may seem necessary, to put a stop to so illegal a practice.

"I have the honour to be,
"My Lords and Gentlemen,
"Your obedient Servant,
"Alexander Boyle.

"To the Trustees, &c., &c."

Ordered,—"That the solicitor do instruct the inspector of the county of Kerry, in the measures necessary to be taken by him for suppressing this illegal practice."

* * * *

The secretary to the trustees, Mr. Corry, appears to have been a very able man; and the reports contain so much interesting matter that I think I may make rather more copious extracts therefrom than I at first intended. The following is the subject of a petition presented in June, 1815.—(*See* Report 1815, page 133).

"Mr. James Barklie, a respectable linen-bleacher, of 'Linen Vale,' near Keady, has just been summoned to attend before the Rev. N. Smith, a magistrate of this county, on Monday, the 12th June, to answer a complaint maliciously preferred against him for using Lime in the whitening of linens in his bleach-yard. If the law in this case should be acted upon, it must prove ruinous to Mr. Barklie, as an individual, and destructive in its consequences to almost the entire trade of this country."

The reply is highy characteristic, and speaks well for the good sense of the trustees.

Ordered,—"That the Rev. Mr. Smith (the magistrate before whom the informations alluded to in the foregoing communications have been lodged) be acquainted, that inasmuch as the penalty against *bleaching with lime* remains unrepealed, this Board are of opinion that he must use his own discretion in the enforcement of it in the present instance; and that the bleachers who have forwarded the foregoing memorial be informed of this, our decision, and that they be at the same time acquainted, that if the law, as it stands at present, is likely to operate so injuriously to the trade, they ought to petition Parliament for an alteration in the Act, and the Board will attend to any application of theirs upon the subject."

The old law referred to was certainly framed in a very mistaken spirit. Only fancy a legislature settling the proper dye of a large calico-printing establishment in Manchester at the present day!—yet such an act would scarcely be more absurd than the one under which Mr. Barklie was summoned before the magistrate. In the best-managed bleaching concerns in the North, lime is *now* much in use; it is not only required for imparting the necessary causticity to highly-carbonated alkalis, but is also applied in making steeping solutions for coarse linens, and, combined with chlorine, forms a very active bleaching compound (though certainly not so safe a *base* as the more retentive soda). What a commotion would now be excited should some of our large bleachers be indited at "Quarter Sessions" for using lime; yet thirty-eight years ago they would have incurred such a risk!

Verily such exposures do not say much for the wisdom of the so-called "good old times." These remnants of ignorant legislation were, however, soon swept away they did as much injury to the prosperity of the linen manufacture, and trade in general, as the severe penal laws enacted by the Ministers against the Roman Catholics of Ireland did to the cause of "civil and religious liberty,"—that cause for which the good King William III. fought and triumphed. And here I may remark, that the progress of civilised improvement in Ireland has at all times suffered by the errors and divisions among her sons,—the wild excitement of party, the fierce enthusiasm of sectarian religion, as well as the love of unprofitable amusements, have contributed their quota to the backward condition of the fatherland. If Irishmen had joined together cheerfully to promote the general welfare of their common country, laying aside for a time (but not consequently yielding) their peculiar distinctive opinions—if all the proprietors of the soil had made a rule of residing at home during the greater portion of the year —if the large and liberal views of William the Third had been carried out, and if the English Government had not, in the last century, oppressed the country by partial and impolitic legislation,—Ireland might now be classed among the first nations of the earth. As it is, she is, unfortunately, too often an object of pity to some, and contempt to others. The foibles of her children are a constant source of ridicule; and though she rightfully claims some of the greatest and best of men* as native-born Irishmen, this term of nationality is frequently used in other countries by the ignorant and prejudiced as a by-word and a reproach!

This is not as it should be; and yet it must be admitted that no one can travel through Ireland without perceiving the marked difference between the north and east of the country, and the south and west; the *Anglo*-Irish and Scotto-Irish blood, coupled with the profession of Protestantism, everywhere appears identical with enlightened progress. Did all the towns of Ireland resemble Belfast, Irishmen might be proud of their country; and yet, in natural advantages of situation and fertility of soil, the north is by no means more happy than the south: indeed the latter, in these respects, has perhaps the advantage, and it certainly has a superior *climate*.

This is, however, a digression from my subject, to which I must return. Towards the end of the year 1815, the attention of the Linen Board was directed to some improvements, proposed and brought under their notice by an English gentleman named Lee. The object of Mr. Lee was almost identical with the present attempt of the Chevalier Claussen,—namely, the management of flaxen fibre without any retting process; and neither of these gentlemen at any time succeeded in converting to their views the practical manufacturers engaged in the trade; and as want of success cannot be ascribed to any want of trial, I intend on a future occasion devoting an entire paper to the subject, and shall endeavour to point out therein the causes of their failure.

It may not be generally known that the Linen Hall, in Dublin, in old times, was the mart to which all the merchants repaired with the cases of bleached linens finished, and ready for sale.

There the English traders attended, and made their purchases; in those days the means of communication into the country were few, and the system of one grand central market answered all parties admirably; the development of new roads through the island, and the rising steam fleet of Belfast, eventually broke up this monopoly; the Irish merchants found their way across the Channel to London and Manchester, where they appointed agents to sell their goods, instead of troubling the buyers to come to Dublin. After the breaking-up of this great market, the dissolution of the Linen Board soon followed: in fact, the trade was no longer under its control, and the intelligent linen-merchants were getting far in advance of the trustees in the knowledge of the manufacture. It was my intention to finish my brief history of the Linen Board in this letter, but I have already written so much, and I have so much yet to say, that I must conclude for the present. If, however, the subject is at all interesting to your readers, I shall devote another paper or so to illustrating the operations of this important Board.

CHEMISTRY AND PERFUMERY.

Sir,—When such periodicals as "Household Words" and the "Family Herald" contain scientific matters, treated in a manner to popularise science, all real lovers of philosophy must feel gratified; a little fiction, a little metaphor, is expected, and is accepted with the good intention with which it is given in such popular prints; but when the *Journal of the Society of Arts* reprints quotations from such sources, without modifying or correcting their expressions, it conveys to its readers a tissue of fiction rather too flimsy to bear a truthful analysis.*

In the article on Chemistry and Perfumery, in No. 47, you quote that "some of the most delicate perfumes are now made by chemical artifice, and not, as of old, by distilling them from flowers." Now, Sir, this statement conveys to the public a very erroneous idea; because the substances afterwards spoken of are named essences of fruit, and not essences of flowers, and the essences of fruits named in your article never are, and never can be, used in perfumery. This assertion is based on practical experience. The artificial essences of fruits are ethers: when poured upon a handkerchief, and held up to the nose, they act, as is well known, like chloroform. Dare a perfumer sell a bottle of such a preparation to an "unprotected female?"

Again, you quote that "the drainings of cow-houses are the main source to which the manufacturer applies for the production of his most delicate and admired perfumes."

Shade of Munchausen! must I refute this by calling your attention to the fact that in the south of France more than 80,000 persons are employed, directly and indirectly, in the cultivation of flowers, and in the extraction of their odours for the use of perfumers? that Italy cultivates flowers for the same purpose to an extent employing land as extensive as the whole of some English counties? that tracts of flower farms exist in the Balkan, in Turkey, more extensive than the whole of Yorkshire? Our own flower farms at Mitcham, in Surrey, need not be mentioned in comparison, although important. These, Sir, are the main sources of perfumes. There are other sources at Thibet, Tonquin, and in the West Indies; but enough has been said, I hope, to refute the cow-house story. This story is founded on the fact that Benzoic acid *can be* obtained from the draining of stables, and that Benzoic acid has rather a pleasant odour. Some of the largest wholesale perfumers use five or six pounds of gum Benzoic per annum, but none use the Benzoic acid. The lozenge-makers consume the most of this article when prepared for commercial purposes; as also the fruit essences. Those of your readers interested in what *really is used* in perfumery, are referred to the last six Numbers of the "Annals of Pharmacy and Practical Chemistry;" article "Perfumery." Your obedient Servant,

Septimus Piesse.

PROCEEDINGS OF INSTITUTIONS.

Leamington.—The Seventh Annual General Meeting of the Royal Leamington Literary and Scientific Institution was held in the Reading-room on Wednesday, the 12th instant. Mr. Overell, the Honorary Secretary, having briefly opened the proceedings, read the report, which congratulated the members on their having so far attained the object they had so long had in view in meeting within the walls of a building intended for their accommodation; and although the Committee regretted that the lecture hall was not in so forward a state as to admit of their holding that meeting in it, yet they hoped that at the commencement of the ensuing year they would be in a position to open it with a *soirée* such as would do credit not only to the Institution, but to the town itself. The report then pointed out the various advantages which had already resulted from the union of the Institution with the Society of Arts, the state of the finances, library, &c., and concluded by urging on the members increased exertions. The expenditure for the year amounted to 145*l.* 19*s.* 1*d.*, and the receipts to 145*l.* 6*s.* 3*d.* The officers appointed for the ensuing year were the Rev. J. H. Smith, President; F. Manning, Esq., the Rev. Dr. Burbidge, the Rev. W. Cleaver, the Rev. J. H. Davis, T. Sharp, Esq., Vice-Presidents; Mr. Overell was re-elected the Honorary Secretary. The library now consists of 1,239 volumes. In the course of a few months this Institution will be in the occupation of a lecture hall 80 feet long, 34 feet wide, and 28 feet high, beneath which there will be a large room intended for the purposes of a museum and a committee room. In front is a large house recently purchased, the rooms of which are devoted to the purposes of a reading-room, library, class-rooms, and accommodation for the librarian. To the house has been added reception rooms, and a handsome portico. The total cost is expected to be about 2,600*l.*

---

* The warrior Wellington, the statesman Edmund Burke, the poet Goldsmith, the learned Swift, the eloquent Sheridan, and a host of others.

* If our Correspondent had carefully read the article he so fiercely attacks, he would have seen that the authorities were Dr. Lyon Playfair's lecture, and Professor Fehling, in the *Wurtemberg Journal of Industry*.—Ed.

Reading.—On Tuesday sennight there was a soirée at the New Hall, in connection with the Literary and Mechanics' Institution. Mr. F. Pigott, M.P., presided, and in his opening address said that he feared the Institution had not been popular with the mechanics of the town, as they did not appear to have given it support. He thought the reduction in the rate of subscription for mechanics and artizans a good step. Mr. Keating, M.P., followed in the same direction, and spoke to the Lecture programme which the Institution had issued. In the course of the evening a glee party from St. George's Chapel, Windsor, performed "Evening's Twilight," "Spring's Delight," and "Sleep, gentle Lady;" and there was also a party of instrumentalists. Mr. George Grossmith recited the case of "Bardell *v.* Pickwick, for Breach of Promise of Marriage," and a piece called "Skying the Copper."

Southampton.—A special general meeting of the members of the Polytechnic Institution was held in the hall of the Institution in Hanover-buildings, on Tuesday sennight, to consider, and give a final decision on, the plan proposed by the Committee, for the purchase of the Victoria Rooms and grounds, and their adaptation to the purposes of the Institution. The meeting was very largely attended. Mr. J. R. Stebbing (one of the Vice-Presidents) took the chair, and introduced the business of the meeting in a few remarks on the eventful and important character of the proposition, with reference to the future condition of Southampton, as well as to the interests of the Institution itself.—Mr. D. Geddes, Secretary to the Building Committee, then read the Report of the Committee, which stated, that the Institution had now arrived at that stage beyond which it could not proceed, without entering upon some such arrangement as that submitted for approval and support. The lease of the old premises would expire next year, and no enlargement which could be effected would meet the increasing wants of the Institution. The Committee therefore recommended the purchase of the Victoria Rooms, (which had been occasionally hired for lectures) at a sum of 4,000*l.*, including all fixtures and grounds. The proposed alterations had been estimated at 2,050*l.* These would include a new and capacious lecture-hall, of an amphitheatrical form, with seats for 1,800 persons, and every other accommodation of the most approved kind, with an entrance from the level of the pavement in Portland-terrace; a reading-room and library, most conveniently placed as regards light and access; a scientific, class, and model-room, a museum, committee-room, and, what has been hitherto much needed, a lecturers' retiring-room, waiting-room, cloak-rooms, kitchen, and all other conveniences necessary to so important a building. These arrangements were proposed to be effected without interfering with the present ball and card rooms, which, as well as the new great hall, the Committee thought should be let as heretofore, and would realize 650*l.* per annum; the Committee suggested that the necessary capital might be raised in shares of 1*l.* each, payable in four quarterly instalments—the shares to be transferable,—and each shareholder to receive interest on the capital, not exceeding five per cent., in the first instance; so that every member of the Institution might be enabled to secure at least one share in the projected undertaking. Should the demand for shares not be sufficient to meet the amount necessary for the alterations and improvements, the property might still be purchased for 4,000*l.* and the rest wait future results. The Report was adopted, there being only two dissentients, amid great applause; and the Committee were authorized to take all necessary steps for the purpose of carrying out the views therein expressed. About 1,100 shares were taken up in the room after the meeting, and since that time the number has been considerably increased.

Tamworth.—The anniversary meeting of the Midland Association of Mechanics' Institutes was held under the auspices of the Tamworth Library, on Tuesday last. The conference in the morning was attended by the Right Hon. the Earl of Yarborough, Sir Robert Peel, Bart., M.P., C. H. Bracebridge, Esq., Mr. P. Le Neve Foster, and the following Delegates from various Institutions:—Birmingham, Messrs. Lloyd, Hudson, Williams, and Blews; Boston, Mr. Adams; Derby, John Moss, Esq., Mayor, Douglas Fox, Esq., and Mr. Madeley; Chesterfield, Rev. W. Blythe and Mr. T. Warwick; Grantham, Mr. Buckley; Worksop, Dr. Heldram and S. Owen, Esq.; Leicester, Messrs. Hollings, Smallfield (Honorary Secretary), and Walker; Stafford, Mr. Maybury; Lutterworth, Mr. Iven. The Earl of Yarborough having left the chair, Sir Robert Peel, the newly-elected President, said that he had great faith in the Unions of Mechanics' Institutions, as they stimulated each other to greater activity. He then referred to the liberal manner in which certain of the leading publishing houses had, on a suggestion from the Society of Arts, consented to allow rates of discount varying from 25 to 50 per cent. to Institutions in Union with that body, in the purchase of books. After the reading of the Report of the proceedings during the past year, a discussion ensued among the delegates; when the following Resolutions were passed:—1st. "That it is the opinion of the delegates that the character of Lectures, and the mode of systematising the courses, need revision, so as to give them a more elementary, progressive, and popular character; and that all such Lectures should be accompanied, as far as possible, by contemporaneous class instruction under competent teachers." 2nd. "That it is highly desirable that a system of village libraries should be established, so as, if possible, to place an educational library in every populous village." In the evening a conversazione took place in the Town Hall, which was attended by a large number of the most respectable inhabitants of the town and neighbourhood. Among the company present were the Right Hon. the Earl of Yarborough, Sir Robert Peel, M.P., Mr. Bass, M.P., Mr. A'Court, M.P., Mr. M. D. Hill, Q. C., the Recorder of Birmingham, Mr. Adderley, M.P., Dr. Lyon Playfair, Mr. Monckton Milnes, M.P., the Mayor of Birmingham, the Mayor of Derby, Mr. C. H. Bracebridge, the Rev. E. Harston, Vicar of Tamworth, Mr. P. L. N. Foster, the Secretary to the Society of Arts, and Mr. W. S. Dugdale. **Sir Robert Peel**, in opening the proceedings, expressed the great pleasure he felt in witnessing so numerous an assemblage. He was glad to see around him such a distinguished body of practical men, and he thought he might be allowed to offer a few general observations which suggested themselves to his mind. They were celebrating the anniversary of an Institution the object of which was to improve the minds of their fellow men by the opportunities afforded at the present moment. Strictly speaking, they were a Peace Congress; their desire was to diffuse a taste for that peaceful knowledge which would be useful to all classes of the community. He was not going to ask them to side with the Crescent or to share the risks of the Cross, or to argue the evils attendant upon standing armies. That might be all very well at Edinburgh or Islington, but in the Midland Counties they required the public mind to be stirred up to the consideration and prosecution of more rational and more useful subjects. They desired to teach the artisans of the country some study which would be available in the sphere of employment which they occupied. For that object they had associated themselves together, and thought that great advantages would be derived by periodical meetings like the present, inasmuch as they would produce a sympathy between all classes such as that which they witnessed on that occasion. Sir Robert proceeded to observe, that the working men of the kingdom were equally intellectually endowed with others; but let them turn their eyes which way they might they would find that economy of labour was the most conspicuous subject to which, as regarded their interests and the interests of the public, their attention ought at the present time to be directed. With all their present means, when man reached manhood he was still behind hand. The hon. baronet expressed a hope that Parliament was about to inaugurate a measure of primary education applicable to the whole kingdom. Lord John Russell, beyond all other statesmen, was capable of digesting such a measure, but the task would be beyond the powers of any Government to accomplish, unless it received the co-operative support of the people. The acquisition of knowledge and the cultivation of the arts and sciences among classes of society hitherto deprived of them was the main object of the Mechanics' Institutions; and he (Sir Robert) could assure them that he would do all in his power to improve the moral, the social, and the intellectual condition of the working classes. Above all, he would exercise his best energies to diffuse the blessings of education, and thus strengthen those links which bound in one common chain all the varied interests of society. **Mr. Monckton Milnes**, M.P., being called upon to speak to the great intellectual improvement to be derived from the establishment of reading-rooms, said, he sympathized with all that had fallen from their excellent Chairman with respect to the practical advantages resulting from Mechanics' Institutions, and urged the importance of inducing reading among the working-classes. It was by books that they were taught the value of their social position in comparison with the social condition of working men in other countries. **Mr. Adderley**, M.P., in speaking of the necessity of early education, said he believed with Sir R. Peel, that without primary education the establishment of Mechanics' Institutions would be an imperfect work; and he urged that Government should find funds to support, permanently and efficiently, primary schools, worthy of Great Britain, in every parish in the kingdom. **Dr. Lyon Playfair** complained of the great want of systematic primary education. The Mechanics' Institutions had not done all which their founders had anticipated, but they had, nevertheless, done much good. He said that the desultory system of lectures was pernicious, but that experience had shown that if good lectures were afforded, mechanics and artisans would take advantage of them. The Government were anxious to render all the assistance they could towards the promotion of education; and in the department with which he was connected, they had already made great progress towards affording the public the means of obtaining useful literature at a cheap rate. The **Earl of Yarborough** urged the necessity of union among Mechanics' Institutions, and believed that in so doing he was honestly recommending what would be advantageous to the working population, as well as to the wealthier classes of society. If they who enjoyed riches, bestowed upon them by Providence, were not willing to dispense them for the benefit of the people, they would, in his opinion, lose caste, and become, as they deserved to be, unhappy men. He thought great benefits would be derived from the circulation of books by reading societies, but, in his opinion, comparatively little good would be accomplished unless they made the home of the poor man comfortable—unless they rendered it preferable to the public-house. After addresses from Mr. Hill, Q. C., Mr. C. H. Bracebridge, the Mayors of Birmingham and Derby, Mr. P. Le Neve Foster, and the passing of the usual votes of thanks, the meeting, which was a highly-gratifying one separated.

TO CORRESPONDENTS.

Erratum, in p. 587, first column, line 30, for *preserved alive in spirits, and others slightly opened*, read *preserved alive, and others in spirits, slightly opened.*

Want of space prevents the insertion of Letters from Mr. Campin on "Patent Law," and by "Mercator," on "Gratuitous Lectures;" also, Notices of the Uxbridge and Windsor Institutions.

MEETINGS FOR THE ENSUING WEEK.

Wed. Geological.—Mr. J. W. Dawson, "On the Coal Measures of the South Joggins, Nova Scotia;" Messrs. H. Poole and J. W. Dawson, "On the Coal Measures at Albion Mines, Picton, Nova Scotia;" and Mr. Trimmer, F.G.S., "On the Superficial Deposits of the Isle of Wight."

MISCELLANEA.

Property in Inventions.—Colonel Vergnaud, of the French Artillery, some time since memorialised the Minister of War for a grant of money by way of reward for certain inventions by him of the application of fulminating mercury to the priming of guns. The Minister rejected his application, on the ground that in reality these applications were known before; but in doing so, enunciated the following somewhat startling doctrine: That an officer in the army devotes himself entirely to the service of his country, and that the produce of his labours and of his genius belong solely to it; and that if he needs any other recompense than that which is to be found in his conscience, and the performance of his duties, the approbation of his commander and the satisfaction of the Minister of the Department ought to be all-sufficient. Upon this Colonel Vergnaud again memorialised the Minister, pointing out that in making his claim he was doing nothing more than had been previously done by others in the service, who had had their claims admitted, and rewards in money granted. He did not admit the doctrine, that an officer entering the army devoted all the produce of his labours of mind and body to the State, alleging that such a doctrine was at variance with moral and intellectual progress—the aim of all society; for it took away from individuals the hope of reward. He characterises the doctrine as unworthy the enlightenment of the times, and fitted only for the days of Louis XIV.

Artificial Production of Diamond Powder.—Some considerable sensation has been produced in the scientific circles of Paris by the announcement of the artificial formation of diamond powder. M. Despretz has made two communications to the Académie des Sciences, upon carbon. In these he states, that placing at one, the inferior pole of a voltaic battery, a cylinder of pure charcoal (its purity being secured by preparing it from crystallized white sugar candy), and at the superior pole a bundle of fine platinum wires, so arranged that the charcoal was in the red portion of the electric arc, and the platinum in the violet, he found the carbon volatilized and collected on the platinum wires in a changed state. In these experiments the current has been continued during a month in activity, and the powder collected on the wires has been found to be sufficiently hard to polish rubies with great rapidity, and when burnt it left no residue. M. Despretz asks himself,—Have I obtained crystals of carbon which I can separate and weigh, in which I can determine the index of refraction and the angle of polarization without doubt? No: I have simply produced, by the electric arc, and by weak voltaic currents, carbon crystallized in black octohedrons, in colourless and translucent octohedrons, in plates also colourless and translucent, which possess the hardness of the powder of the diamond, and which disappear in combustion without any sensible residue. A similar result has been obtained by decomposing a mixture of chloride of carbon and alcohol, by weak galvanic currents. The black powder deposited was found to possess equal hardness with that which was sublimed, and rubies were readily polished by it. A few years since, graphite and coke were formed from diamonds; we now appear to be advancing towards the conversion of graphite and coke into diamonds.—*Athenæum.*

Statistics of Cotton.—The following statistics of the cotton trade of the United States, shows the extent of the crop each year for the past eight years, and also the proportions in which it has been distributed throughout Europe and America:

	Total Crop.	Receipts at N. Orleans.	Average Price.
	Bales.	Bales.	Cents per lb.
1845-6	2,100.537	1,041,393	$6\frac{7}{8}$
1846-7	1,778,651	707,324	10
1847-8	2,347,634	1,188,733	$6\frac{3}{4}$
1848-9	2,728,596	1,100,636	$6\frac{1}{4}$
1849-50..................	2,096,706	797,387	11
1850-51..................	2,355,257	995,036	11
1851-52..................	3,015,029	1,429,183	8
1852-53 (estimated).	3,220,000	1,664,864	9

The total receipts of bales at New Orleans for the twelve months ending September 1, 1853, were 1,664,864; being an increase of 210,000 bales over the previous year, which had been the largest ever known before. The entire exports from New Orleans, from September, 1852 to September, 1853, were 1,644,981, distributed through the world in the following proportions: to Great Britain, 922,086; to France, 211,526; to the north and south of Europe, 244,673; and to the United States' ports, 266,696. This gave an increase of exports to England of 150,846 bales, 15,272 to France, 35,514 to the north and south of Europe, and 10,250 to the United States' ports. The importance of the British cotton-producing colonies cannot therefore be overrated; especially when it is remembered that notwithstanding the import to the country of not less than six times the usual quantity of cotton from the East Indies, it is found that the total supply of cotton wool in Great Britain for the first six months of 1853, was 2,182,250 bales; being an increase of 286,287 bales over the same period of the previous year.

Systematic Education.—A meeting of a few friends of education was held at Mr. Hugo Reid's, on the 21st instant, to discuss the subject of the education of those, of all classes, who are sent early to business. It was moved by Dr. Purvis, seconded by Mr. John Shove; and, Resolved,—"That provision for the continuance of the systematic education of those who are taken early from school, and for the useful occupation of their leisure time, is a want, the importance of which is not yet sufficiently estimated." It was moved by Dr. D. B. Reid, seconded by Mr. R. H. Church; and, Resolved, —"That this want can be supplied only by a regular and well-defined course of study, including the leading branches of general knowledge, advancing systematically from the more simple to the more complex subjects, extending over several years, conducted by competent persons, forming one complete and coherent system, and impressed upon youth as a great educational work they have to perform, to qualify themselves properly for the business of life." A local Committee was appointed to consider the best means of establishing such a course of study for young persons in Greenwich and the vicinity.

PATENT LAW AMENDMENT ACT, 1852.

APPLICATIONS FOR PATENTS AND PROTECTION ALLOWED.

From Gazette, 21st October, 1853.

Dated 25th May, 1853.

1281. W. Bauer, Munich—Construction of vessels to be used at various depths under the surface of water, and machinery for propelling, &c., and for carrying on various operations on or under the surface of the water from within upon objects without.

Dated 9th September.

2073. P. Grant and J. Doherty, Manchester—Cutting and finishing brass rule and wood reglet used in letter-press printing, and machinery for same.

Dated 12th September.

2111. L. A. Brocot, Paris—Astronomical calendar.

Dated 17th September.

2163. A. J. Baker, 51, Burton-crescent, London—Strengthening vessels of timber or iron.

Dated 19th September.

2171. C. Collins, Hartford, Connecticut—Manufacture by machinery of tubes from leather, &c., chiefly for covering the drawing-rolls of spinning-machinery.

Dated 26th September.

2213. F. F. Clossmann, 16a, Park-lane, Hyde-park—Production and application of certain materials for textile fabrics, &c.

Dated 1st October.

2243. J. Summerscales and B. Bancroft, Keighley, Yorkshire—Weaving-shuttles.
2245. T. Woodcock, Pulteney-terrace, Islington—Machinery for carving, cutting, chiselling, and engraving.
2247. J. M. Letestu, Paris—Propelling ships.
2249. J. Ambler, Manningham, near Bradford—Preparing and combing wool, &c.
2251. R. Halliwell, Bolton-le-moors, and W. Johnson, Farnworth, Lancashire—Spinning-machinery and grinding-cards.

Dated 3rd October.

2253. Commander M. Dwyer, Unity-place, Samuel-street, Woolwich, and J. Brown, 2, Bridge-terrace, Mile-end—Anchors.
2255. W. J. Thompson, North Shields—Heating reverberatory and other furnaces. (A communication.)
2257. J. Leadbetter and W. Wright, Halifax—Machinery for raising fluid or solid substances.
2259. A. Stanistreet Jee, 6, John-street, Adelphi—Rails for railways.

Dated 4th October.

2261. P. R. Jackson, Salford—Machinery for manufacturing hoops and wheels.
2263. H. J. Jordan, Berners-street—Medicine for venereal affections, called, "The Treisemar." (A communication.)
2265. W. Crofts, Derby-terrace, Nottingham—Weaving.
2267. N. Smart, Merton, Surrey—Brick manufacture.
2269. W. Gossage, Widnes, Lancashire—Obtaining saline compounds from solutions.

Dated 5th October.

2271. J. Holmes, Portsea—Canteens for soldiers, &c.
2273. J. Wright, Rochester—Apparatus for landing and embarking passengers from steam and other boats.

2275. H. J. Betjeman, New Oxford-street—Apparatus for fixing capsules on necks of bottles, &c.
2277. S. L. Worth, 293, Oxford-street, and A. D. V. Canavan, Fitzroy-street—Improved polishing surface.
2279. J. Mason, Rochdale—Preparing cotton for spinning, &c.

Dated 6th October.

2281. J. Milner, Stratford, Essex—Steam-engines.
2283. J. H. Cary, Norwich—Improved pianoforte-action.
2285. M. F. de Castro, Madrid—Preventing accidents on railways.
2287. H. Goddard, Castle-gate, Nottingham—Improvements in stoves and kitchen-ranges.
2289. J. Rubery, Birmingham—Umbrella and parasol-furniture. (A communication.)

Dated 7th October.

2291. G. Ellins, Droitwich—Threshing-machinery.
2293. J. Bullough, Accrington, J. Walmsley, and D. Whittaker, Blackburn—Machinery for warping and sizing yarns, &c.
2295. J. H. Johnson, 47, Lincoln's-inn Fields—Apparatus for compressing or rarifying air, &c. (A communication.)
2299. T. Lambert, Short-street, New-cut, Lambeth—Ships' water-closets.
2301. F. and W. Whitehead, Crayford, Kent—Improvements applicable to lamps and reflectors.

Dated 8th October.

2305. J. Denton, Prestwich—Looms.
2307. W. Wilkinson, Nottingham—Protecting telegraph-wires.
2309. W. Potts, Birmingham—Mantelpieces.
2011. C. May, and J. Samuel, Great George street, Westminster—Joining ends of rails of railways.
2313. W. E. Newton, 66, Chancery-lane—Fire-arms and cartridges. (A communication.)

Dated 10th October.

2315. H. Rawson and T. Whitehead, Leicester—Regulating flow of air to boiler-furnaces.
2317. G. Fergusson Wilson, Belmont, Vauxhall—Manufacture of candles, &c.
2319. F. Warner and J. Shotton, Crescent, Jewin-street—Manufacture of large bells.
2321. H. L. Pattinson, Scot's-house, Gateshead—Manufacture of sulphuric acid.

Dated 11th October.

2323. H. Kemp, Barkham-terrace, Southwark—Preparation of wood for sheathing ships, &c.
2325. L. A. F. Demoulin, 17, Rue Sedaine, Paris—Apparatus for common road-carriages, to prevent accidents and increase power.
2327. D. Dick, Paisley—Manufacture of flexible pipes.
2329. J. Worrall, jun., Salford—Dyeing fustians, &c., and machinery for same.
2331. J. H. Nalder, Alvescott, and J. T. Knapp, Clanfield, Oxfordshire—Winnowing corn.
2333. J. Harris, Hanwell—Apparatus for heating water, &c.
2335. J. Webster, Leicester—Water-gauges for steam-boilers.
2337. B. Couvan, Fenchurch-street—Signals on railways.

APPLICATIONS WITH COMPLETE SPECIFICATIONS FILED.

2340. T. B. Warée, Paris, and 16, Castle-street, Holborn—Apparatus for measuring pressure of air, steam, &c. (13th Oct., 1853.)
2380. A. E. L. Bellford, 16, Castle-street, Holborn—Treatment of copper ores. (A communication.) (15th Oct.)
2381. C. J. L. Cloux, jun., 16, Castle-street, Holborn—Process for preparation of hemp after the stripping. (15th Oct.)
2385. A. Corvi, Paris, and 16, Castle-street, Holborn—Improvements in organs. (15th Oct.)

WEEKLY LIST OF PATENTS SEALED.

Sealed 20th October, 1853.

950. John Smethurst, of Manchester—Invention of an improved plan for packing yarn and other materials.
951. Samuel Weight, of Cheltenham—Improvements in ventilating mines, sewers or drains, ships, buildings generally, and other localities.
952. Emile Chappuis, fils, of St. Mary Axe—Invention of an improved apparatus for the diffusion of light, to be called the "Myriastratic reflector."
953. Henry M'Evoy, of Birmingham—Improvements in the construction and manufacture of door-bolts.
960. Charles Reeves, jun., of Birmingham—Improvements in swords.
964. Philip Harris, of Chatham—Improvements in fire-arms.
965. William Robjohn, of Islington—Invention of an improved meter for measuring and indicating the measure of liquids.
976. Edward Onslow Aston and George Germaine, both of Millwall—Improvements in compositions for coating wood, metal, and other materials exposed to the action of sea-water or the weather.
986. Richard Johnson, of Manchester—Improvements in machinery or apparatus for drawing wire.
987. Edward O'Connell, of Bury, Lancashire—Improvements in the mode or method of feeding infants and invalids, and in apparatus connected therewith.
989. Charles Léon Desbordes, of Paris—Improvements in instruments for measuring the pressure and temperature of air, steam, and other fluids.
990. John Chatterton, of Birmingham—Improvements in covers for wagons, carts, and other vehicles.
993. James Emery, of Preston—Improvements in the construction of gigs, dog-carts, and other vehicles.
995. Julian Bernard, of Guildford-street—Improvements in casting metals, and in moulding or forming other materials.
1006. Frederick George Underhay, of Well-street, Gray's-inn-road—Improvements in reaping and mowing-machines.
1031. James Berry, of Horwich, near Bolton, and Thomas Booth, of Chorley—Improvements in machinery or apparatus for printing or staining woven fabrics and paper.
1033. William Hart Sitwell, of Sydenham—Improvements in projectiles for cannon and fire-arms.
1034. Sir John Scott Lillie, of South-street, Finsbury—Improvements in roads, floors, footways, and other like surfaces.
1043. Jacques Stanislas Vigoureux, of Rheims—Improvements in the combing of wool and other fibrous materials.
1064. François Monfrant, of Paris—Improvements in lubricating materials. (A communication.)
1135. John Fisher, of Liverpool—Improvements in machinery for propelling vessels, and in the mode of manufacturing the same.
1149. George Roberton and Alexander Roberton, both of Bradford, Yorkshire—Improvements in apparatus for drying and finishing woven fabrics.
1187. Edward Taylor Bellhouse, of the Eagle Foundry, Manchester—Improvements in steam-boilers.
1245. Charles de Bergue, of Dowgate-hill—Improvements in the permanent way of railways, and also in chairs and in sleepers for permanent way.
1293. Charles Cowper, of Southampton-buildings—Improvements in the manufacture of iron. (A communication.)
1351. John Robert Johnson, of Stanbrook-cottage, Hammersmith—Improvements in the manufacture of type and articles used in letter-press printing.
1359. William Boyd, of Belfast—Improved apparatus for manufacturing chlorine or chlorides.
1519. Juste Giret, of Paris—Improvements in artificial and malleable stones, and in the apparatus to be used for such purposes.
1623. John Knox Stuart, of Glasgow—Improvements in hats and other coverings for the head.
1773. Theodore Dethier, of Pimlico—Improved machine for mortising, drilling, and boring.
1885. Richard Archibald Brooman, of Fleet-street—Invention of certain new compounds, which may be employed for mouldings, frames, and many purposes to which wood, papier-maché, plaster, gutta-percha, and other like substances are applicable. (A communication.)
1901. John Gwynne, and James Egleson Anderson Gwynne, both of Essex-wharf, Strand—Improvements in the preparation or manufacture of fuel.
1927. George Leedham Fuller, of St. Mary's-road, Peckham—Improvements in steam-engines.
1947. Robert Moore Sievier, of Louviers, France—Improved machinery for the manufacture of terry or cut pile fabrics, parts of which are applicable to the weaving of other fabrics.
1955. Frederick Osbourn, of Albion-street, King's-cross—Improved machinery for cutting woven and other fabrics.
1959. James Webster, of Leicester—Improvements in pressure gauges.

Sealed 24th October.

998. George Kennedy Geyelin, of Camden-town—Improvements in the manufacture of white oxide of zinc.

Sealed 26th October.

1002. Auguste and Jean le Roy, and Eugène Pavy, all of Paris—Improvements in the production of lace and other fabrics.

WEEKLY LIST OF DESIGNS FOR ARTICLES OF UTILITY REGISTERED.

Date of Registration.	No. in the Register.	Title.	Proprietor's Name.	Address.
Oct. 24	3521	"Bennett's Locomotive Regulator"......	John Bennett	65, Cheapside, London.